



DEVELOPMENT OF NEW RULES CONCERNING THE CLEAN AIR INTERSTATE RULE (CAIR) AND AMENDMENTS TO RULES CONCERNING THE NO_x SIP CALL

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Update since Preliminary Adoption

Since preliminary adoption the fact sheet has been updated to reflect changes to the rule language regarding U.S. Steel's inclusion in the CAIR NO_x ozone season trading program, the compliance supplement pool (CSP) mercury incentive, EE/RE grant program, and provisions for NO_x allowances that have accumulated in NO_x SIP Call set-asides through 2008. U.S. Steel's inclusion in the CAIR trading program added 786 tons to the ozone season budget. Estimated costs/revenues have been updated to reflect the revised non-electric generating units (non-EGUs or large industrial boilers) budget.

These changes are shown throughout the fact sheet using strikeout (deletions) and bold (additions).

Overview

On March 10, 2005, the U.S. EPA signed the Clean Air Interstate Rule (CAIR) requiring 28 states and the District of Columbia to submit state implementation plan (SIP) revisions to reduce emissions of sulfur dioxide (SO₂) and nitrogen oxide (NO_x) from fossil-fuel-fired power plants. CAIR consists of three cap and trade programs for NO_x and SO₂: an annual SO₂ trading rule that builds on existing Acid Rain program; an ozone season NO_x trading rule that builds upon the existing NO_x SIP call program, and a new annual NO_x trading program. Reductions are required to take place in two phases: 2009 and 2015 for NO_x and 2010 and 2015 for SO₂. States have the option of meeting the state emissions budget for SO₂ and NO_x by reducing emissions from sources other than power plants without an emissions trading program. Indiana's budgets are:

Annual NO_x

2009-2014: 108,935 tons
2015 and later: 90,779 tons

Annual SO₂

2010-2014: 254,599 tons
2015 and later: 178,219 tons

Ozone Season NO_x

2009-2014: 45,952 tons
2015 and later: 39,273 tons

IDEM has chosen to implement CAIR with a cap and trade program requiring reductions from power plants because it is highly cost effective and it is unlikely there would be sufficient SO₂ and NO_x reductions from other sources to meet Indiana's budgets.

The draft rule generally follows the CAIR model trading rules and contains the same key elements. Much of the state rule incorporates federal language with little or no change. In several areas, the state has more flexibility to adapt the rule to its particular needs. IDEM has worked extensively with the public on those issues and anticipates further discussion prior to final adoption.

Citations Affected

Amends: 326 IAC 10-3, 326 IAC 10-4.

Adds: 326 IAC 10-4-16, 326 IAC 24.

Affected Persons

The public and thirty seven (37) power plants, plus nine (9) non-electric generating units (large industrial boilers).

Reason or Reasons for the Rule

The federal CAIR is intended to reduce interstate transport of pollution. Reductions in NO_x and SO₂ emissions from power plants will assist counties in meeting the National Ambient Air Quality Standards (NAAQS) for ozone and fine particulate (PM_{2.5}). The CAIR requires states to either adopt the CAIR model rules to implement three cap and trade programs for power plants or develop an alternative rule that would meet the emission caps through NO_x and SO₂ reduction from power plants and other sources.

Economic Impact of the Rule

IDEM has conducted a fiscal analysis for submission to the Office of Management and Budget (OMB). In accordance with state law, the OMB issued its fiscal impact analysis on May 16, 2006. It is included in this board packet. The fiscal analysis includes two scenarios: Scenario 1 for cost estimates by IDEM and Scenario 2 for cost estimates by the Indiana Utility Group (IUG), a coalition of Indiana Energy Association members and individual power plants. Costs are incremental to the existing federal and state requirements, such as the federal Acid Rain program and the NO_x SIP Call rule and include the cost of retrofit controls and emissions trading (i.e., the net cost of buying/selling allowances). The cost estimate for total annual cost (in 2005 dollars) for different time intervals of the rule is:

Scenario 1 (IDEM)

- 2008 – 2012: \$571 million
- 2013 – 2017: \$747 million
- 2018 – 2022: \$906 million

Scenario 2 (IUG)

- 2007 – 2013: \$815 million
- 2014 – 2017: \$1,021 million
- 2018 – 2022: \$899 million

The State Utility Forecasting Group (SUFG) at Purdue University projects that the impact on electricity rates (% increase) for each scenario is:

Scenario 1 (IDEM)

- 2008 – 2012: 5.16%
- 2013 – 2017: 5.97%
- 2018 – 2022: 6.34%

Scenario 2 (IUG)

- 2007 – 2013: 6.44%
- 2014 – 2017: 8.55%
- 2018 – 2022: 7.63%

IDEM also estimated costs for non-electric generating units (non-EGUs) based on the ozone NO_x budget, projected emissions and the allowance prices. Non-EGU costs are negative as revenue is projected from the sale of allowances. The annual cost (in 2005 dollars) for different time intervals of the rule is:

- 2008 – 2012: (-) \$ 6 million
- 2013 – 2017: (-) \$ 8 million
- 2018 – 2022: (-) \$ 8 million

Benefits of the Rule

In 2015, CAIR will provide health and environmental benefits valued at more than 25 times the cost of compliance (U.S. EPA estimate). In 2015, CAIR will cap Indiana power plant emissions of SO₂ at 178,219 tons annually, a 78% percent reduction from 2003 emissions. In 2015, CAIR will cap Indiana power plant emissions of NO_x at 90,779 tons annually, a 65% reduction from 2003 emissions. CAIR will be instrumental in bringing Indiana counties into attainment with the ozone and PM_{2.5} NAAQS.

Description of the Rulemaking Project

The major elements of the rulemaking are listed here and are explained in more detail in the following paragraphs.

- NO_x annual trading rule (326 IAC 24-1)
- SO₂ annual trading rule (326 IAC 24-2)
- NO_x ozone season trading rule (326 IAC 24-3) – includes non-EGUs from NO_x SIP

Call rule

- Amendments to NO_x SIP Call rule to sunset the rule for control periods in 2009 and beyond, except that 2009 allocations already made remain in effect (326 IAC 10-4-16)
- Amendments to NO_x SIP Call rule so that energy efficiency/renewable energy (EE/RE) program changes take effect sooner (326 IAC 10-4)
- Amendments to NO_x SIP Call rule to address pre-2010 NO_x allocation equity issues (326 IAC 10-4)
- ~~Amendments to move US Steel out of NO_x trading program starting in 2010 (326 IAC 10-3)~~

The draft rule includes several changes to the allocation methodology included in the federal model rules for the NO_x trading programs. The trading rule for SO₂ does not contain an allocations section because allocations are made by U.S. EPA under the acid rain program (Title IV) with no options under the federal model trading rules for states to allocate. Sources will turn in Title IV allowances at a ratio of greater than one to one to ensure reductions beyond Title IV; sources may use pre-2010 allowances at a one to one ratio.

2009 CAIR Ozone Season NO_x Allocations

NO_x allowances under the NO_x SIP Call rule have already been allocated, recorded by U.S. EPA, and traded for the 2009 ozone season. This is the first year that the U.S. EPA model rule allocates allowances for the CAIR ozone season trading program. The draft rule contains language stating that these 2009 allowances have already been recorded by U.S. EPA in 326 IAC 24-3-8(b), so new allocations for 2009 ozone season will not be made.

Timing of Allocations for Electric Generating Units (EGUs)

IDEM is proposing a methodology that includes a six (6) year allocation, six (6) years in advance for both the CAIR ozone season NO_x and annual NO_x trading programs. For the initial allocation this will include

allowances for the entire first phase of the program. For the ozone season trading rule the initial allocation will only cover five (5) years since 2009 allowances have already been allocated. This is slightly different than the model rule that provides for states to make an initial allocation for Phase I (2009-2014) and then make annual submissions of allocations six (6) years in advance. IDEM had considered using a more frequent allocation methodology, as was provided in the NO_x SIP Call, allowing new units to draw from the main pool of allowances quicker, but affected sources were in favor of longer allocations cycles that provide greater certainty on the number of available allowances for planning purposes.

Baseline for Existing Units

The allocation methodology makes a proportional allocation of allowances to individual EGUs based on heat input to the boiler, which is a measure of fuel usage and heat content of the fuel. The draft rule updates baseline heat input information using the most current eight (8) years of data every six (6) years. The longer look back period for the initial allocation (1998-2005) is more appropriate than the timeframe in the model rule (2000-2004) because many Indiana sources were installing equipment to comply with the NO_x SIP Call, which would not be representative of “normal” operations. U.S. EPA’s model rule did not include a baseline that would be updated over time; retired units would continue to receive allowances forever and existing units would have allocations based on data that is eventually decades old. The draft rule provides that the most recent operational data would be used for calculations and that a retired unit would eventually stop receiving allowances.

Heat Input and Output Adjustment Factors

The draft rule includes adjustment factors for heat input (existing units) and electrical output (new units) for determining baseline.

- A fuel adjustment factor of one hundred percent (100%) for coal, sixty percent (60%) for oil-fired units, and forty percent (40%) for all other fuels. These factors are consistent with those in the

model rules and the factors U.S. EPA used to determine state caps.

- Retains the output-based provision for new units, but modifies the electrical output to heat input conversion factor to provide a greater benefit for more efficient units. New units use electrical output data to convert output into heat input for the determination of the baseline. The conversion factor is based on whether the unit is coal-fired or not.

New Unit Set-aside

The draft rule includes a new unit set-aside for both the annual and ozone season trading rules. The ozone season program new unit set-aside uses the same amount of allowances as the model rule, that is five percent (5%) of the Phase I trading budget and three percent (3%) of the Phase II trading budget. The draft rule for the annual trading program includes a new unit set-aside equal to four and one-half percent (4.5%) and two and one-half percent (2.5%) of the Phase I and II trading budgets, respectively. The one-half percent (0.5%) difference from the model rule is used to provide annual NO_x allowances for an energy efficiency and renewable energy (EE/RE) set-aside to be paired with the current ozone season EE/RE set-aside in the NO_x SIP Call rule.

Compliance Supplement Pool

The draft rule includes a compliance supplement pool (CSP) of 20,155 NO_x allowances for allocation of early reduction credits or allowances based on need for units that may have unique issues complying with the 2009 implementation deadline. The CSP provision included in the draft rule differs from the one included in the federal NO_x annual trading program model rule by providing a mechanism for IDEM to reserve allowances for all eligible units in advance of allocations to provide some certainty to sources regarding the minimum amount of allowances that would be available to them for early reduction credits. IDEM developed this language with input from stakeholders. An eligible unit that can reserve allowances is one that has or will

have post-combustion NO_x control equipment installed before December 31, 2008 or for all other units one that is able to achieve a NO_x emissions rate that is at least ten percent (10%) lower than the heat input weighted average NO_x emission rate for 2003 through 2005, excluding May 1 through September 30 of each year. Also, eligible units must be coal-fired CAIR NO_x units. The ten percent (10%) restriction does not reduce the amount of allowances awarded to an unit, but units that do not meet this threshold will not be awarded the reserved allowances. ~~IDEM is not proposing to include at this time a restriction suggested by some stakeholders on awarding additional allowances under the mercury co-benefit incentive that provides that the actual amount of additional allowances cannot exceed the number of actual emissions reductions achieved in excess of the amount of reserved allowances. IDEM will continue to discuss this provision further with the workgroup and U.S. EPA for approvability.~~

Compliance Supplement Pool to Provide Incentives for Co-benefit Mercury Reduction

IDEM is proposing to provide incentives for control configurations that maximize mercury reduction co-benefits within the CSP program. The goal of this option is to encourage new selective catalytic reduction (SCR) installation and year-round SCR operation at units that have or will have electrostatic precipitator (ESP) and flue gas desulfurization (FGD) in 2007 and 2008, since this control configuration can achieve up to ninety percent (90%) mercury reduction. With the intent of providing additional NO_x allowances to units that obtain optimal mercury reductions and not reducing the opportunity for units making NO_x reductions to obtain allowances, IDEM is proposing to award the bonus allowances to units that achieved reductions in excess of their reserved allowances using allowances leftover from the reservation process or hardship set-aside. Units with ESP, SCR, and FGD installed that are receiving

allocations in excess of their reserved allowances will receive 1.5 times as many allowances as NO_x reductions. **The rule contains a limitation so that in no case will the actual amount of additional CAIR NO_x allowances awarded exceed the number of actual NO_x reductions achieved in excess of the reserved amount.** Energy Efficiency/ Renewable Energy Set-aside

The energy efficiency/renewable energy (EE/RE) set-aside program of the current NO_x SIP Call rule was not included in the U.S. EPA model rule, but is an option that states can include in their CAIR rules. The EE/RE set-aside is a separate pool of NO_x allowances that IDEM can allocate to EE/RE projects to provide incentives for their growth. The program is based on a two-step process. Applicants apply for allowances in one (1) year and the actual transfer of allowances occurs after the following summer. For the annual EE/RE set-aside, half of the unallocated allowances will be returned to the EGUs, since the annual EE/RE set-aside comes from the new unit set-aside for EGUs and the other half will be retained by the state to fund a new EE/RE grant program for smaller scale projects. Under the grant program IDEM would transfer the allowances to ~~another state entity (one option is the Indiana Office of Energy and Defense Development)~~ where they could be sold and the money could be used to fund smaller projects ~~such as residential geothermal projects~~ **that do not meet the one (1) ton NO_x reduction threshold.** The ozone season EE/RE set-aside would be set up the same, except that half of unallocated allowances would be returned to the non-EGUs and the other half would go to the grant program. **The rule includes provisions governing the distribution of NO_x allowances to the grant program.**

There are a few changes that IDEM is proposing to the EE/RE program to expand the types of projects that qualify for NO_x allowances. IDEM has modified the

definition of energy efficiency or renewable energy projects to specifically include installation of integrated gasification combined cycle equipment; renewable energy projects that displace the ~~use~~ **combustion** of coal, natural gas, or oil; and highly efficient steam generation (previous program was limited to electricity generation).

Non-EGU Allocations post 2009

U.S. EPA is allowing states that had included non-EGUs in the NO_x SIP Call to include those units in the ozone season trading program. IDEM had used a fixed allocation system in the NO_x SIP Call with the allocations to be revised for post 2009 allocations. With input from stakeholders IDEM is proposing a new allocation methodology for non-EGUs as part of the CAIR that is similar to the EGU methodology. IDEM is proposing an initial allocation of five (5) years (2010-2014) using the previous six (6) years of heat input (2000-2005). Subsequent allocations will be done on a six (6) year cycle beginning in 2008 and will use an eight (8) year heat input baseline. This will put the non-EGUs on the same schedule as the EGU allocations. IDEM is proposing to use the six (6) year baseline for the initial allocation because this will allow the use of the most recent and reliable heat input data. ~~By source request, IDEM is also proposing to move US Steel and the number of allowances allocated to it out of the non-EGU trading program and back to 326 IAC 10-3 with specific emissions limits for blast furnace gas-fired boilers. IDEM is in discussions with U.S. EPA about the approvability of such a change.~~

Non-EGU Set-asides – Changes from NO_x SIP Call

IDEM is proposing an EE/RE set-aside of 500 allowances, a new unit set-aside of 400 allowances, and a new set-aside for hardship situations of 150 allowances. Provisions are included to allow the use of the other set-asides when one is oversubscribed and the other is undersubscribed. All unallocated

allowances in the new unit and hardship set-asides will be redistributed to existing non-EGUs, but one half of the unallocated EE/RE set-aside allowances will be transferred to an EE/RE grant program. **At the end of 2008 any remaining allowances in the NO_x SIP Call set-asides will be redistributed to CAIR NO_x units and non-EGUs.**

Summary of NO_x Trading Program Budgets
Annual Program

	2009-2014	> 2015
EGU existing	103,488	88,055
EGU new	4,902	2,270
EE/RE	545	454
Total	108,935	90,779

Ozone Season Program

	2009	2010-2014	> 2015
EGU existing	43,654	43,654	38,095
EGU new	2,298	2,298	1,178
Non-EGU existing	8,564	7,941 8,727	7,941 8,727
Non-EGU new	98	400	400
EE/RE	1,115	500	500
Hardship	0	150	150
Total	55,729	54,943 55,729	48,264 49,050

Scheduled Hearings

First Public Hearing: June 7, 2006, Room A, Indiana Government Center South, 402 West Washington Street, Indianapolis, Indiana.

Second Public Hearing: November 1, 2006.

Consideration of Factors Outlined in Indiana Code 13-14-8-4

Indiana Code 13-14-8-4 requires that in adopting rules and establishing standards, the board shall take into account the following:

- 1) All existing physical conditions and the character of the area affected.
- 2) Past, present, and probable future uses of the area, including the character of the uses of surrounding areas.
- 3) Zoning classifications.

4) The nature of the existing air quality or existing water quality, as appropriate.

5) Technical feasibility, including the quality conditions that could reasonably be achieved through coordinated control of all factors affecting the quality.

6) Economic reasonableness of measuring or reducing any particular type of pollution.

(7) The right of all persons to an environment sufficiently uncontaminated as not to be injurious to:

- (A) human, plant, animal, or aquatic life; or
- (B) the reasonable enjoyment of life and property.

Consistency with Federal Requirements

The new rules and amendments are consistent with federal rules.

Rulemaking Process

The first step in the rulemaking process is a first notice published in the *Indiana Register*. This includes a discussion of issues and opens a first comment period. The second notice is then published which contains the comments and the department's responses from the first comment period, a notice of first meeting/hearing, and the draft rule. The Air Pollution Control Board holds the first meeting/hearing and public comments are heard. The proposed rule is published in the *Indiana Register* after preliminary adoption along with a notice of second meeting/hearing. If the proposed rule is substantively different from the draft rule, a third comment period is required. The second public meeting/hearing is held and public comments are heard. Once final adoption occurs, the rule is reviewed for form and legality by the Attorney General, signed by the Governor, and becomes effective 30 days after filing with the Secretary of State.

IDEM Contact

Additional information regarding this rulemaking action can be obtained from Susan Bem, Rule Development Section, Office of Air Quality, (317) 233-5697 or (800) 451-6027 (in Indiana).